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		NTIONAL APPLICATION NO. AU00/00656	09 June 2000		PRIORITY DATE CLAIMED  10 June 2001
		FINVENTION			
APP	LIC	ING EVENT AND AUTO-TRI VM (S) FOR DO/EO/US	GGER MEMORY HAN	DLING	
		r, Harry Louis; JANKO	, viaumitt		ATUS APPLICABLE***
App	Hean	t herewith submits to the United Sta	ites Designated/Elected Of	ffice (DO/EO/US) the follo	wing items and other information;
2. 3.		This is a FIRST submission of its This is a SECOND or SUBSEQUENTIAL SECOND or SUBSEQUENTIAL SECOND OF SUBSECUENTIAL SECOND OF	ENT submission of items nat examination procedur the applicable time limit	concerning a filing under es (35 U.S.C. 371(f)) at an set in 35 U.S.C. 371(b) and	y time rather than delay
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8.		A translation of the amendmen	ts to the claims under P	CT Article 19 (35 U.S.C	371(c)(1)).
9.		An oath or declaration of the in	iventor(s) (35 U.S.C. 37	71(c)(4)).	·
10.		A translation of the annexes to (35 U.S.C. 371(c)(5)).	the International Prelim	inary Examination Repo	nt under RCT Article 36
Iten 11.	ns 1	1. to 16. below concern other An information Disclosure State	er document(s) or info ement under 37 CFR 1.	mation included: 97 and 1,98.	
12.		An assignment document for re-	cording. A separate co	ver sheet in compliance	with 37 CFR 3.28 and 3.31 is included
13.		A FIRST preliminary amendme A SECOND or SUBSEQUENT	ent. preliminary amendmen	<b>i.</b>	
14.		A substitute specification.	er 4 1		
15.		A change of power of attorney	and/or address letter.		
16.		Other items or information: 2.	International ( International )	Search Report Preliminary Exami	ination Report
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**PATENT** 

#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: HARRY L. PLATT/V. JANKOV ART UNIT:

SERIAL NO.: 09/

**EXAMINER:** 

FILED:

P.C.T. APPLICATION NO.: PCT/AU00/00656

PRIORITY CLAIMED: JUNE 10, 1999

P.C.T. INTERNATIONAL FILING DATE: JUNE 9, 2000

U.S. NATIONAL FEE PAID: DECEMBER 10, 2001

TITLE: CYCLING EVENT AND AUTO-TRIGGER MEMORY HANDLING

#### PRELIMINARY AMENDMENT

Hon. Commissioner for Patents United States Patent and Trademark Office Box PCT Washington, D. C. 20231

Dear Sir:

Prior to an examination on the merits of the aboveidentified patent application, please amend the aboveidentified application as follows:

"Express Mail" mailing label number ET 670106897 US
Date of Deposit December 10, 2001

I hereby certify that this paper is being deposited with the U.S. Postal Service "Express Mail - Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above and is addressed to: Hon. Commissioner for Patents, United States Patent and Trademark Office, Washington, D. C. 20231.

Edwin D. Schindler, Reg. No. 31,459

December 10, 2001

Date

#### IN THE CLAIMS

Please cancel the <u>second</u> claim numbered as Claim "2" and add the following claim:

--5. The method of recording into memory of a cardiac event recorder according to claim 1, wherein if the recording is initiated by the auto-trigger, the cycling mode is not terminated or interpreted.--

#### REMARKS

Prior to an examination on the merits of the aboveidentified patent application, please enter the foregoing amendment.

Claims 1-5 are now pending in the above-identified patent application, as presented by the instant Preliminary Amendment. Claim 1 is the single claim presented in independent form.

The present application represents the U.S. National Phase of P.C.T. Application No. PCT/AU00/00656, filed June 9, 2000, and claiming foreign priority on the basis of a corresponding Australian patent application, filed June 10, 1999.

The originally-filed P.C.T. application now being entered into the U.S. National Phase (and for which no amendments were entered during the P.C.T. Chapter II international phase) inadvertently contained two claims numbered as Claim

"2."

By the present amendment, the  $\underline{\text{second}}$  claim numbered as "2" is being cancelled, and is being identically rewritten as "new" Claim 5.

The application is now in condition for a full examination on the merits.

Accordingly, an early examination on the merits and allowance are, therefore, respectfully requested and earnestly solicited.

Respectfully submitted,

HARRY L. PLATT/V. JANKOY

Edwin D. Schindler Attorney for Applicants Reg. No. 31,459

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(631)474-5373

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#### CYCLING EVENT AND AUTO-TRIGGER MEMORY HANDLING

The present invention relates to the field of monitoring a cardiac patient's electrical cardiac activity by means of a cardiac event recorder and, in particular, to the memory handling of such event recorders.

#### BACKGROUND TO THE INVENTION

Cardiac event recorders usually have only one type of memory used for both manual and auto-triggered ECG recordings. Signal artifacts and noise can inadvertently cause a false triggering of the auto-trigger and thus fill the memory with useless information.

It would be advantageous to provide a method and apparatus which prevents the memory of cardiac event recorders from being filled with useless information.

#### OBJECT OF THE INVENTION

It is an object of the present invention to provide a method and apparatus for the recording of an ECG which substantially overcomes or ameliorates the above mentioned disadvantages by preventing memory overflow.

#### DISCLOSURE OF THE INVENTION

According to one aspect of the present invention there is disclosed a method of recording into memory of a cardiac event recorder, said method including the steps of subdividing the memory into two parts, the two parts being a manual trigger memory and an auto-trigger memory, partitioning the auto-trigger memory into a plurality of auto-trigger recording partitions, whereby in the event of a manual trigger, acquired signals are recorded continuously in said manual trigger memory and in the event of an auto-trigger, acquired signals are recorded continuously in said manual trigger memory and then copied into one of said plurality of auto-trigger recording partitions.

PAGE 10

WO 00/76395

2

PCT/AU00/00656

Preferably, the recording is done in cycling mode whereby the signal is continuously recorded in the manual memory thus providing a segment of pre-event recording prior to the manual trigger which records information of a predetermined length of time.

Preferably, if the recording is initiated by the auto-trigger, the cycling mode is not terminated or interrupted.

Preferably, at least two manual trigger recordings are able to be stored in the manual memory.

Preferably, the manual trigger recordings are about 2 to 3 times longer than the auto-trigger recordings.

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#### BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be now be described with reference to the accompanying drawing in which:

Fig. 1 is a diagram showing the memory of the cardiac event recorder.

### BEST MODE OF CARRYING OUT THE INVENTION

When recording an ECG using a cardiac event recorder (not illustrated), the data is recorded into RAM 10 which is generally recorded cyclically, ie when the memory is full, the data overflows and records over the previously recorded data.

The RAM 10 is subdivided into two parts, is a manual trigger memory 11 and an auto-trigger memory 12. The auto-trigger memory 12 is further partitioned into a number of auto-trigger memory recordings 13.

In this cyclic recording mode, the data is continuously recorded into the manual trigger memory 12 and thus when a manual trigger is received, this fact is recorded. The data recorded after a manual trigger is then stored in the manual trigger memory 11 with at least

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WILSON & YOUNG

PAGE 89

WO 00/76395

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PCT/AU00/00656

two manual triggered recordings be stored in the manual memory. In this cyclic memory mode, a segment of pre-event recording is also stored in the manual memory 11.

If an auto-trigger function initiated the trigger, the cycling mode is not terminated or interrupted (unlike the manual trigger). After the duration of the auto-triggered event which is recorded in the manual memory 11, it is copied into one of the partitions 13 of the auto-trigger memory 12.

The foregoing describes only one embodiment of the present invention, and modifications obvious to those skilled in the art can be made thereto without departing from the scope of the present invention.

WILSON & YOUNG

PAGE 11

WO 00/76395

PCT/AU00/00656

#### **CLAIMS**

- 1. A method of recording into memory of a cardiac event recorder, said method including the steps of subdividing the memory into two parts, the two parts being a manual trigger memory and an auto-trigger memory, partitioning the auto-trigger memory into a plurality of auto-trigger recording partitions, whereby in the event of a manual trigger, acquired signals are recorded continuously in said manual trigger memory and in the event of an auto-trigger, acquired signals are recorded continuously in said manual trigger memory and then copied into one of said plurality of auto-trigger recording partitions.
- 2. The method of recording into memory of a cardiac event recorder according to claim 1, wherein the recording is done in cycling mode whereby the signal is continuously recorded in the manual memory thus providing a segment of pre-event recording prior to the manual trigger which records information of a predetermined length of time.
- The method of recording into memory of a cardiac event recorder according to claim 1, wherein if the recording is initiated by the auto-trigger, the cycling mode is not terminated or interrupted.
  - The method of recording into memory of a cardiac event recorder according to claim 1, wherein at least two manual trigger recordings are able to be stored in the manual memory.
- 4. The method of recording into memory of a cardiac event recorder according to claim 1, wherein the manual trigger recordings are about 2 to 3 times longer than the auto-trigger recordings.

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(71) Applicants and

(72) Inventors: PLATT, Harry, Louis [AU/AU]; 14/166 Belmore Road, Randwick, NSW 2031 (AU). JANKOV, For two-letter codes and other abbreviations, refer to the "Guid-Vladimir [AU/AU]; 14/166 Belmore Road, Randwick, NSW 2031 (AU).

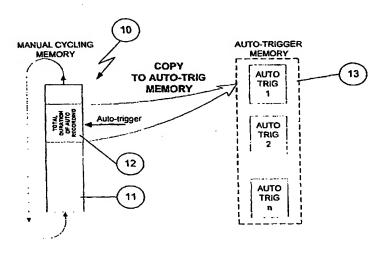
- (74) Agent: YOUNG, Philip, Claude; Wilson & Young, P.O. Box 553, Alexandria, NSW 1435 (AU).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU. ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
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#### Published:

With international search report.

ance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CYCLING EVENT AND AUTO-TRIGGER MEMORY HANDLING



(57) Abstract: A method of recording into memory of a cardiac event recorder is disclosed. The method includes the steps of subdividing the memory into two parts, the two parts being a manual trigger memory and an auto-trigger memory, partitioning the auto-trigger memory into a plurality of auto-trigger recording partitions, whereby in the event of a manual trigger, acquired signals are recorded continuously in said manual trigger memory and in the event of an auto-trigger, acquired signals are recorded continuously in said manual trigger memory and then copied into one of said plurality of auto-trigger recording partitions. Preferably, the recording is done in cycling mode whereby the signal is continuously recorded in the manual memory thus providing a segment of pre-event recording prior to the manual trigger which records information of a predetermined length of time. Preferably, if the recording is initiated by the auto-trigger, the cycling mode is not terminated or interrupted.



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WILSON & YOUNG

PAGE 12

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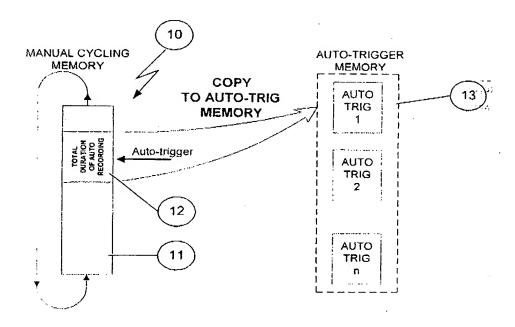


Fig 1

Substitute Sheet (Rule 26) RO/AU

# Declaration and Power of Attorney For Patent Application English Language Declaration

As a below nam	ed inventor, I here	eby declare that:			
first and joint inv	entor (it plural nar nt is sought on the	nes are listed below) a invention entitled	of the subject m	atter which is cial	med and
CYCLIN	IG EVENT AND A	AUTO-TRIGGER ME	EMORY HANDL	ING	
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was filed on		9 June 2000	•		a
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Thereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT International filing date of this application:

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(Supply similar information and signature for third and subsequent joint inventors.)